UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,401	07/26/2001	Jose Kolencheril Raphel	2006579-0455 (CTX-171)	4249

69665   7590   11/24/2008
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EXAMINER
STRANGE, AARON N

ART UNIT	PAPER NUMBER
2453	

MAIL DATE	DELIVERY MODE
11/24/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>28 August 2008</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>34-63</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>34-63</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>20081029</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed 8/28/2008 have been fully considered but they are

not persuasive.

2.   With regard to claims 49-63, and Applicant's assertion that the claimed "system"

is statutory "even in cases of software embodiments of the interface unit" since the

software embodiment of the interface comprises "functional descriptive material"

(Remarks, 2-3), the Examiner respectfully disagrees. While a software embodiment of

the interface unit and queue would be "functional descriptive material", since the claims

do not record the functional descriptive material on a computer-readable medium, the

claims embody functional descriptive material *per se*. Descriptive material is

nonstatutory when claimed as descriptive material *per se*. *See In re Warmerdam*, 33

F.3d 1354, 1360, 31 USPQ2d 1754, 1759 (Fed. Cir. 1994).

3.   With regard to claims 34 and 49, and Applicant's assertion that Moore fails to

teach or suggest "monitoring changes in response times from the server and changes of

a rate in which the response times from the server change" (Remarks, 4), the Examiner

respectfully disagrees. Moore teaches monitoring changes in network conditions to

enable devices to respond to the changes as desired (col. 6, l. 63 to col. 7, l. 14).

Specifically, Moore teaches monitoring changes in response times from a server

(latency experienced by packets)(col. 7, ll. 56) and monitoring changes of a rate in

which the response times from a server change (the rate at which response times

change is monitored to determine the "variation in latency", also known as jitter, and

changes in jitter are also monitored)(col. 7, l. 6). Monitoring these conditions allows

devices to detect, for example, whether the response times of the network are

changing, as well as the rate at which the responses are changing (detect whether

response times are "increasing substantially")(col. 6, ll. 64-67).

Regarding Applicant's argument that Moore's monitoring of a "change in rate"

differs from the claimed monitoring of "changes to the changes in rate", it is additionally

noted that monitoring a parameter (e.g., "change in rate") necessarily includes

monitoring changes in that parameter (changes in the "change in rate").

Claim Rejections - 35 USC § 101

4.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

5.   Claims 49-63 are rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter.

6.   Claim 49 is directed to a "system" having "an interface unit" and a queue. The

speciation of the present application states that "the present invention many be

implemented using ... software" (¶69, ¶74 and ¶75). The cited portions of the

specification would have suggested to one of ordinary skill in the art that the claimed

"system" is intended to include software-only embodiments. Since the claim is not

limited to statutory embodiments, it is non statutory.

7.   All claims not individually rejected are rejected by virtue of their dependency from

the above claims and their failure to correct the above noted deficiencies.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

9.   Claims 34-39, 45-54 and 60-63 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Cherkasova et al. (US 6,360,270) in view of Allan (US 7,024,477)

further in view of Moore et al. (US 7,000,012).

10.   With regard to claim 34, Cherkasova discloses a method for managing

throughput while avoiding overload of one or more servers, the method comprising the

steps of:

transmitting, by an interface unit, client requests to a server to maintain

performance of server throughput within a predetermined threshold range (at least Col

5, Lines 51-57);

intercepting, by the interface unit, a request from a client to open a transport later connection with the server (at least Col 4, Lines 15-16);

buffering the intercepted request in a queue (at least Col 4, Lines 21-25); and

transmitting, by the interface unit, the buffered request to the server upon the interface unit determining that the performance of server throughput is within the predetermined threshold range (accepted messages are sent to the server if there are sufficient resources) (at least Col 4, Lines 38-44).

Cherkasova fails to specifically disclose monitoring responses to client requests intercepted by the interface unit to determine changes in response times or changes in a rate in which the response times change and determine if the performance of the server exceeds the predetermined threshold range.

Allan discloses a similar system for monitoring web servers. Allan teaches monitoring client requests intercepted by an interface unit to determine if the performance of the server exceeds a predetermined threshold (at least Col 5, Lines 29-67). This would have been an advantageous addition to the system disclosed by Cherkasova since it would have allowed the interface unit to determine the performance information of the servers without polling them or requiring them to determine their own performance information.

Moore also discloses a similar system for monitoring network links. Moore specifically teaches monitoring response times of a network link to determine a rate of change for the response times (i.e., whether the response time is "increasing substantially")(col. 6, l. 63 to col. 7, l. 14). Moore teaches that the system may use this

information when determining how to route network traffic, even if the actual response times are otherwise acceptable ("before they result in actual errors")(col. 6, ll. 63-64). Monitoring rates of change in response times would have been an advantageous addition to the system disclosed by Cherkasova and Allan since it would have allowed the system to anticipate when a server's performance will soon exceed the predetermined threshold range, and take preventative measures to help maintain the server performance within the threshold range.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to monitor responses to client requests intercepted by the interface unit to determine the performance of the server, including monitoring response times and the rate of change in response times. This would have provided status information for the servers without increasing the load on the servers by polling them or requiring them to determine their own performance statistics, and allowed the system to estimate when a server is likely to exceed the desired threshold range and take preventative measures to help maintain the performance of the server.

11.   With regard to claim 35, Cherkasova further discloses that the predetermined range comprises one of a maximum threshold range or an optimal threshold range for server throughput (sessions are dropped/allowed based on the threshold to maintain an optimal load)(at least Col 5, Lines 51-57).

12.   With regard to claim 36, Cherkasova further discloses that the predetermined

threshold range comprises a first threshold at a lower point in the predetermined

threshold range and a second threshold at a higher point in the predetermined threshold

range, the first threshold represents one of a faster response time (at least Col 7, Lines

46-51), a lesser number of users, or a greater number of connections (less refused

connections)(at least Col 4, Lines 8-11) that the second threshold (at least Col 5, Lines

51-57).

13.   With regard to claim 37, Cherkasova further discloses transmitting, by the

interface unit, client requests to the server to maintain performance of a server

throughput one of at or near the first threshold (at least Col 5, Lines 51-57).

14.   With regard to claim 38, Cherkasova further discloses determining, by the

interface unit, the performance of the server throughput based on monitoring one or

more of: the number of active connections opened to the server (at least Col 7, Lines

46-51), the response time of the server, the rate at which the response time is changing,

and the intercepted request (request is monitored to see if ti is accepted)(at least Col 4,

Lines 7-12).

15.   With regard to claim 39, Cherkasova further discloses determining, by the

interface unit, the performance of the server throughput based on a first portion of

server resources available to service existing clients and a second portion of server

resources available to accept new clients (new sessions are rejected once utilization

exceeds a threshold, showing that the service level is unsatisfactory)(at least Col 5,

Lines 51-57).

16.   With regard to claim 45, Cherkasova further discloses determining, by the

interface unit, the performance of server throughput by one of a number of requests

pending at the server or server error/overload messages from the server (session

refusals)(at least Col 4, Lines 7-12).

17.   With regard to claim 46, Cherkasova further discloses establishing, by the

interface unit, the transport layer connection with the client in response to request from

the client (new session is created for the requests) (at least Col 4, Lines 38-42).

18.   With regard to claim 47, Cherkasova further discloses opening, by the interface

unit, a second transport layer connection to the server if there is not a free transport

layer connection to the server (new sessions are created for requests not associated

with an existing session) (at least Col 4, Lines 36-42).

19.   With regard to claim 48, Cherkasova further discloses opening, by the interface

unit, a second transport layer connection to the server if the queue comprises one or

more requests from a second client (new sessions are created for each client request

not associated with an existing session)(at least Col 4, Lines 36-42).

20.   Claims 49-54 and 60-63 are rejected under the same rationale as claims 34-39

and 45-48, since they recite substantially identical subject matter. Any differences

between the claims do not result in patentably distinct claims and all of the limitations

are taught by the above cited art.

21.   Claims 40, 41, 55 and 56 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Cherkasova et al. (US 6,360,270) in view of Allan further in view of

Moore et al. (US 7,000,012) further in view of Phaal (US 6,006,269).

22.   With regard to claim 40, while the system disclosed by Cherkasova, Allan and

Moore shows substantial features of the claimed invention (discussed above), it fails to

specifically disclose identifying a preferred client value for the request of the client, and

determining the position of the client request in the queue based on the preferred client

value.

        Phaal teaches identifying a preferred client value (priority status) for the request

of a client, and determining the position of the client request in the queue based on the

preferred client value (priority status requests are handled before any other requests)(at

least Col 8, Line 66 to Col 9, Line 50). This would have been an advantageous addition

to the system disclosed by Cherkasova, Allan and Moore since it would have allowed

different client requests to be prioritized, ensuring that all requests are handled in a

timely manner.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to identify a preferred client value and determine the position of the client request in the queue based on the preferred client value in order to prioritize previously deferred requests and ensure that they are handled in a timely manner.

23.   With regard to claim 41, Phaal further discloses determining, by the interface unit, the preferred client value, from one or more of the internet address of the client request, the port number of the client request, by a header related to the client request, by previous requests from the client of the client request, and by a cookie related to the client request (cookie) (at least Col 10, Lines 3-21).

24.   Claims 55 and 56 are rejected under the same rationale as claims 40 and 41, since they recite substantially identical subject matter. Any differences between the claims do not result in patentably distinct claims and all of the limitations are taught by the above cited art.

25.   Claims 42-44 and 57-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cherkasova et al. (US 6,360,270) in view of Allan further in view of Moore et al. (US 7,000,012) further in view of Shabtay et al. (US 2002/0120743).

26.   With regard to claims 42 and 43, while the system disclosed by Cherkasova,

Allan and Moore shows substantial features of the claimed invention (discussed above),

it fails to specifically disclose pooling a plurality of transport layer connections or

multiplexing client requests via the pooled connections.

Shabtay teaches pooling connections and multiplexing client requests via the

pooled connections (at least ¶47). This would have been an advantageous addition to

the system disclosed by Cherkasova, Allan and Moore since it would have reduced the

load on the server in handling transport layer connections (at least ¶10).

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to pool connections and multiplex client requests over the

pooled connections since it would have reduced the load on the server.

27.   With regard to claim 44, Shabtay further discloses closing, by the interface unit,

transport layer connections to the server to bring performance of server throughput

within the predetermined threshold range (at least ¶34).

28.   Claims 57-59 are rejected under the same rationale as claims 42-44, since they

recite substantially identical subject matter. Any differences between the claims do not

result in patentably distinct claims and all of the limitations are taught by the above cited

art.

Conclusion

29.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to AARON STRANGE whose telephone number is

(571)272-3959. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ario Etienne can be reached on 571-272-4001. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. S./
Examiner, Art Unit 2453

/ARIO ETIENNE/
Supervisory Patent Examiner, Art Unit 2457